

FIG. 1

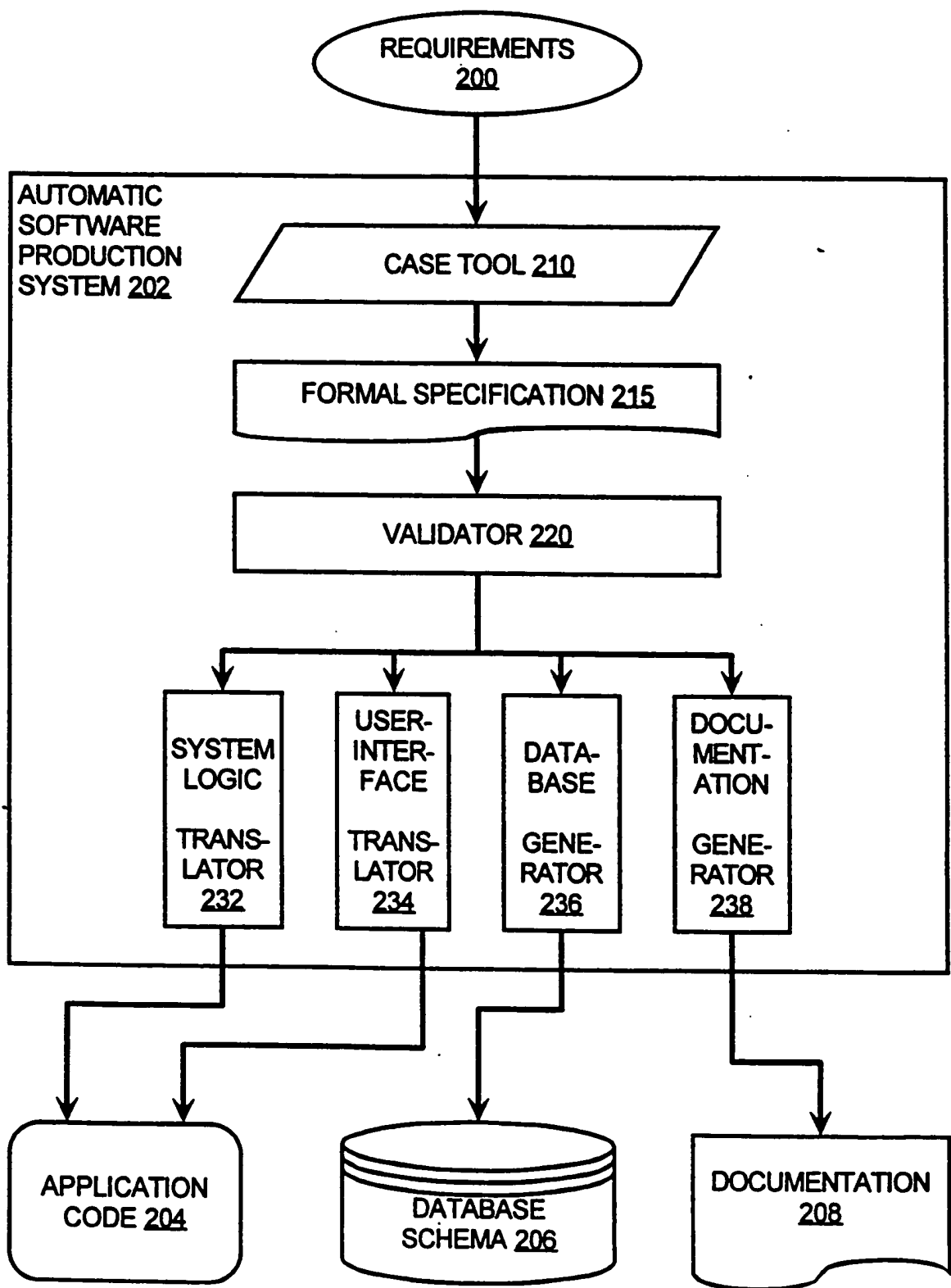


FIG. 2

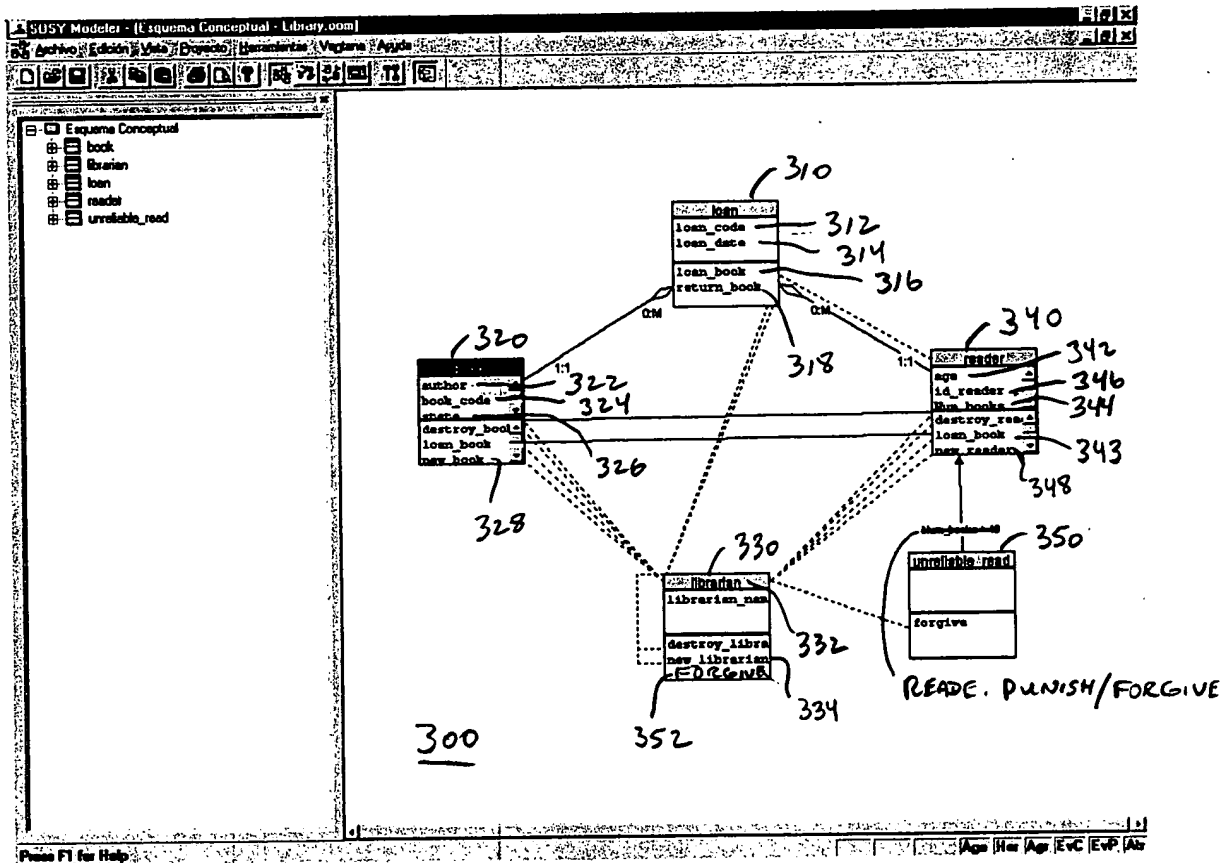


FIG. 3

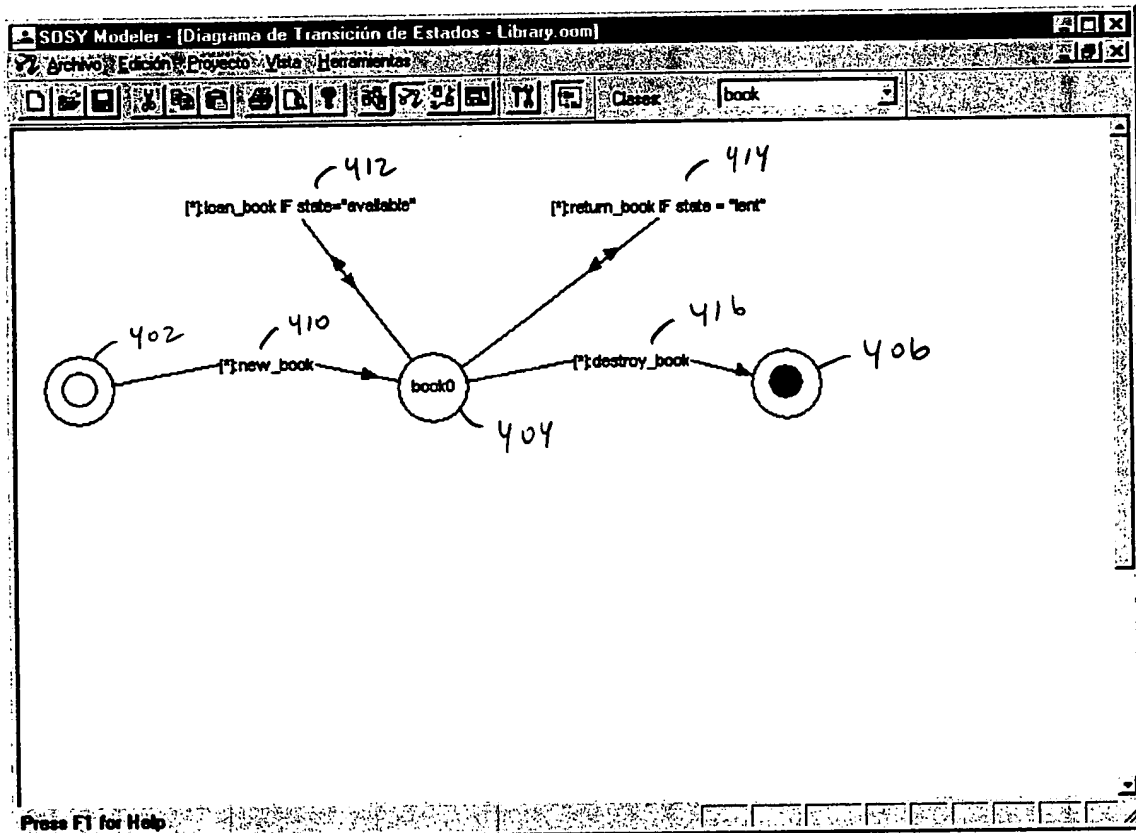


FIG. 4A

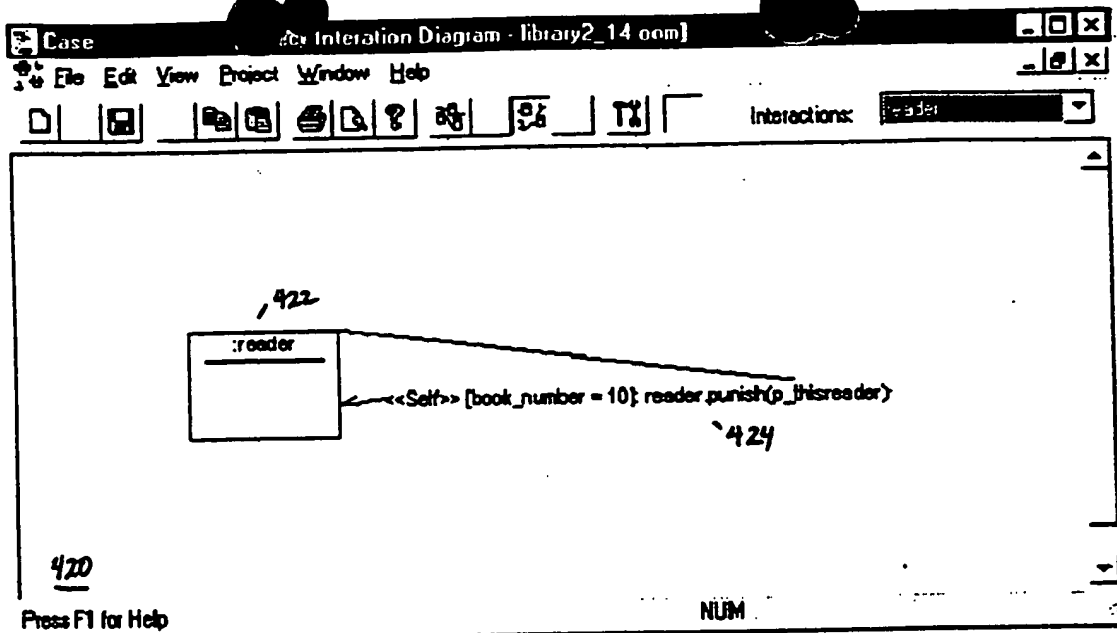


FIG. 4B

Functional Model

Class: reader Attribute: book_number

Cancel

Event	Effect	Condition
loan_book	1	
return_book	1	

Add

Body

Delete

Category

☒ Purpose ☐ State-independent ☐ Discrete-domain

Valuation Details

Event: loan_book Action type: Increment

Valuation condition:

Effect of the event:

1

FIG. 5

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES OF SYSTEM LOGIC TRANSLATORS WILL PERFORM

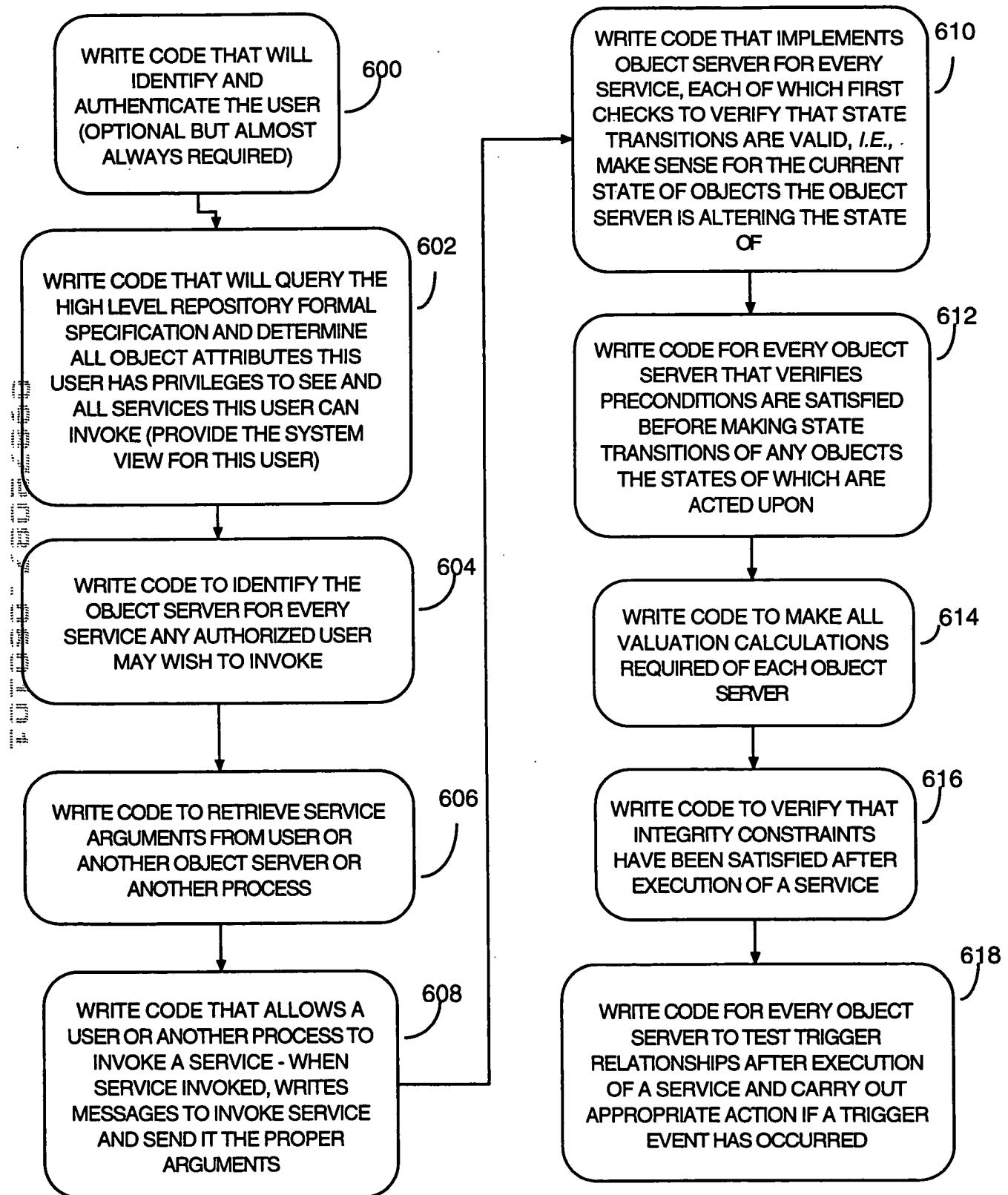


FIG. 6

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES IN THE USER INTERFACE
TRANSLATOR SUBGENUS WILL PERFORM

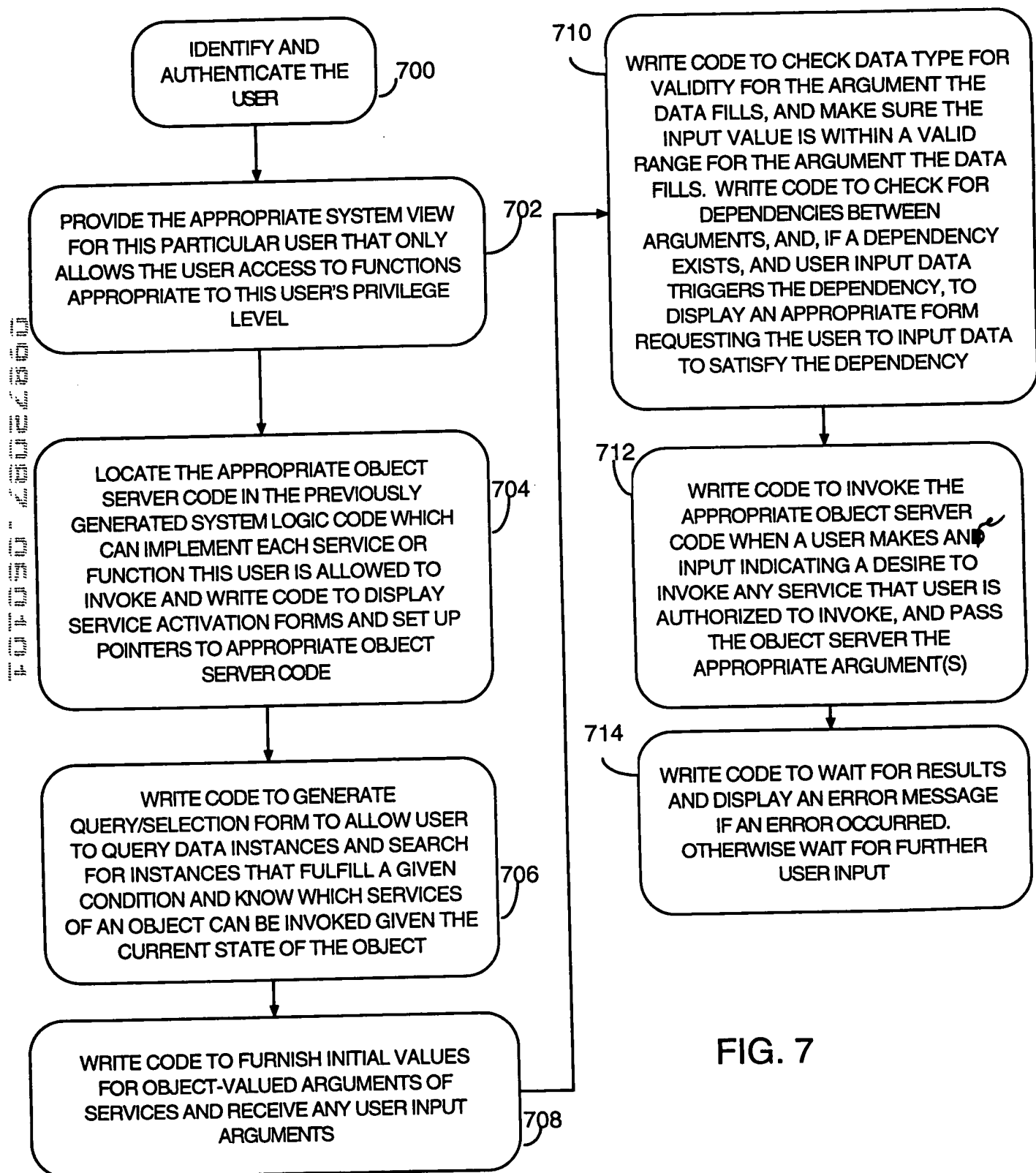


FIG. 7

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES IN THE DATABASE GENERATOR
TRANSLATOR SUBGENUS WILL PERFORM

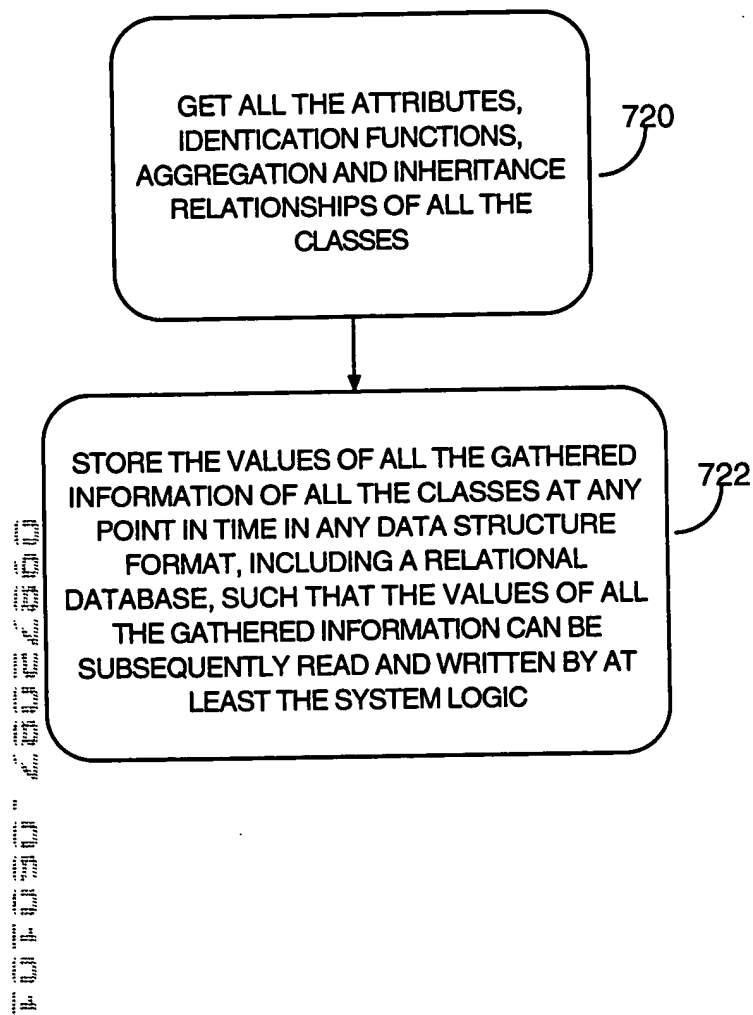
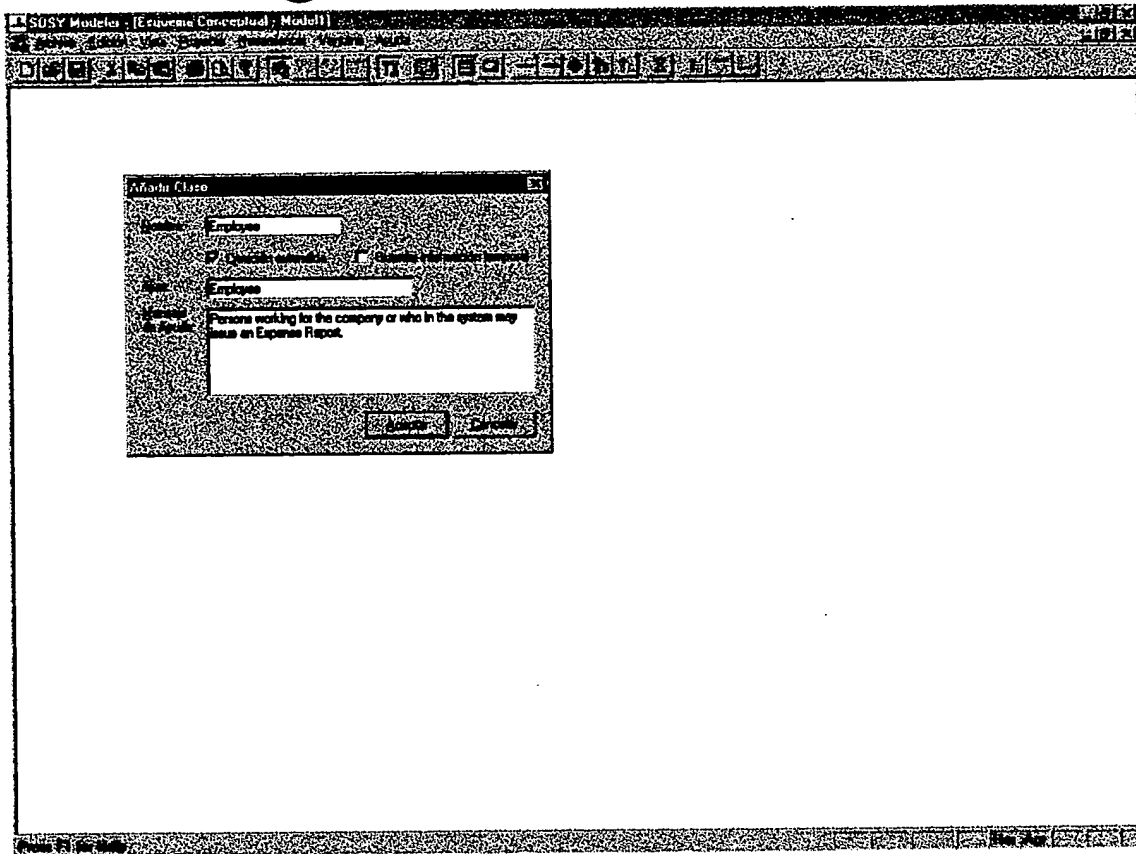
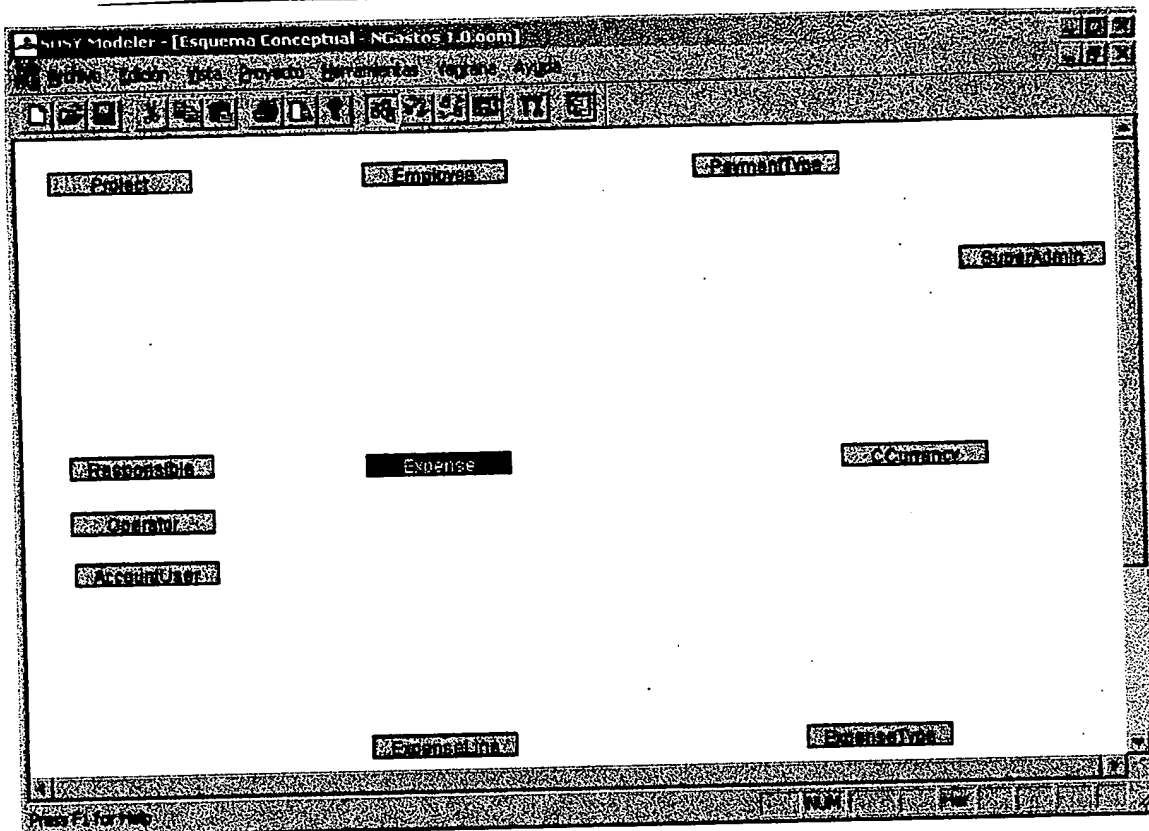


FIG. 8



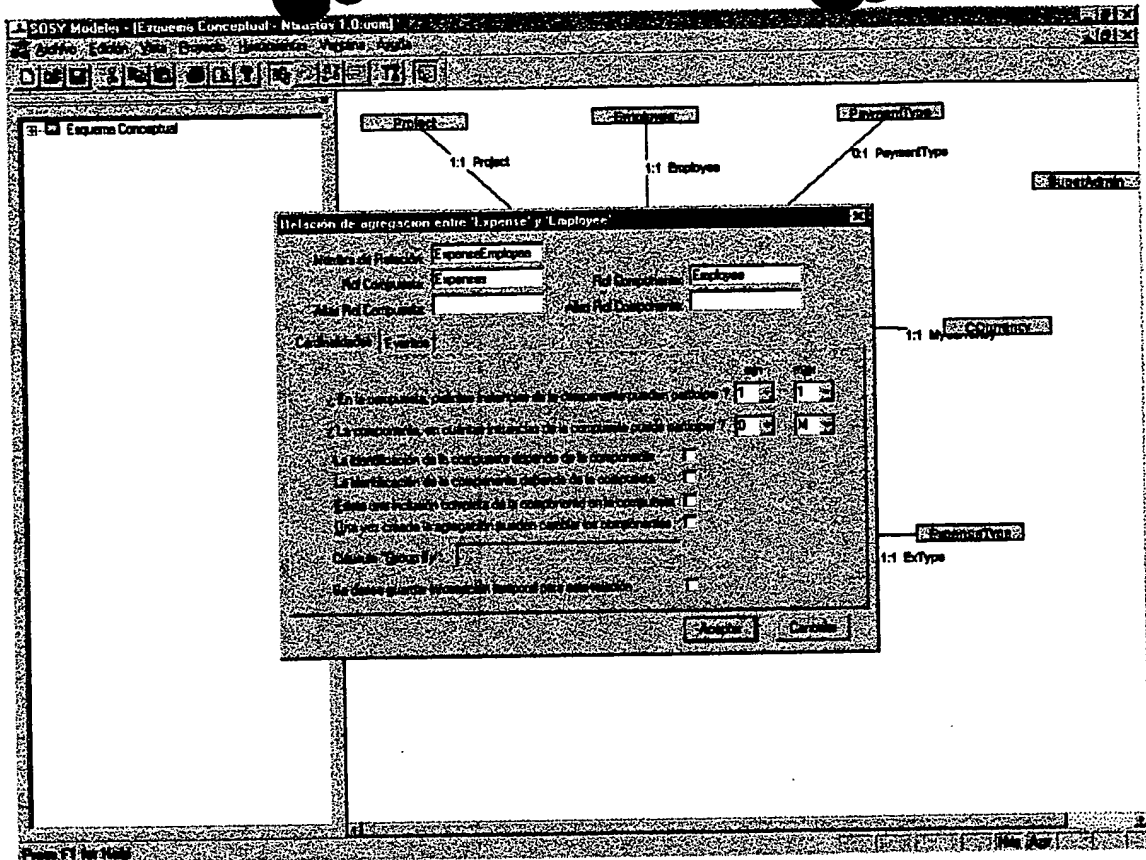
class creation dialog

FIG. 9A



DIALOG SHOWING ALL CLASSES NEEDED & CREATED
IN EXPENSE MANAGEMENT SYSTEM

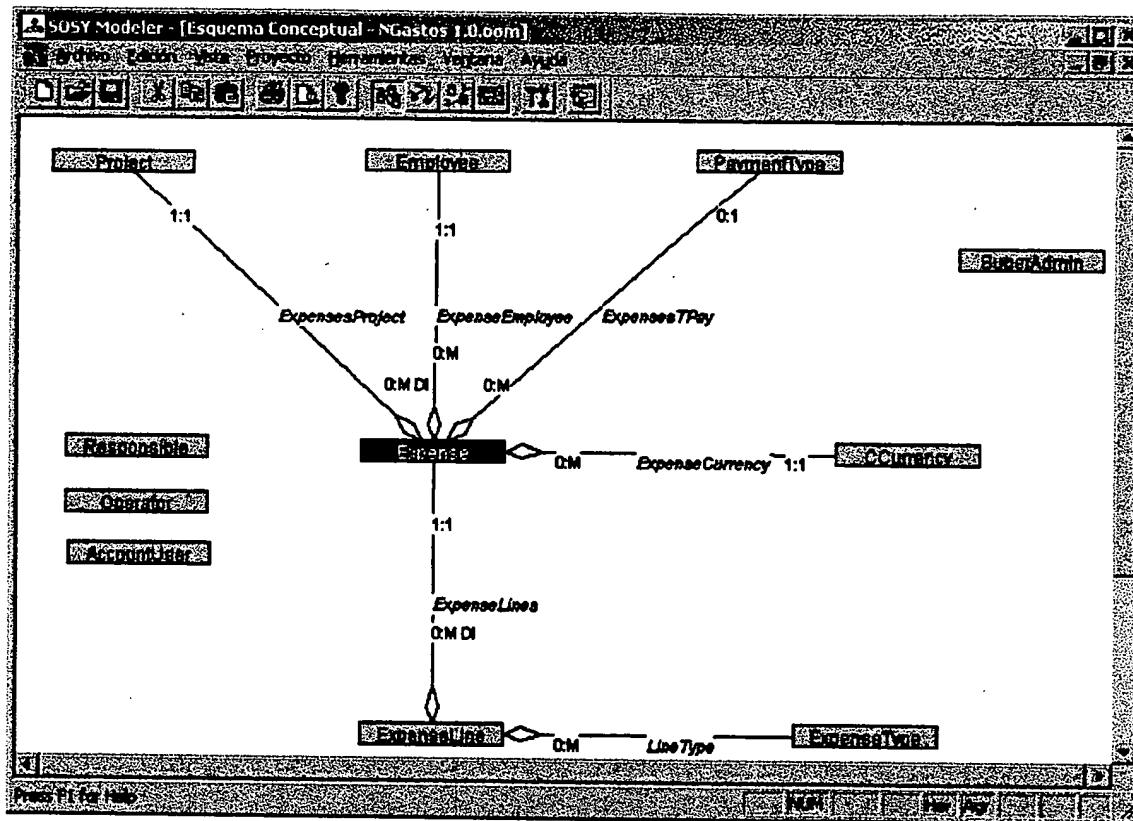
FIG. 9B



dialog to create and modify relationships between classes

FIG. 90

Figure shows relationships found with all their properties indicated.



GRAPHIC DIALOG TO CREATE
RELATIONSHIPS BETWEEN CLASSES
AND GRAPHICALLY SHOW THE
RELATIONSHIPS SO CREATED

FIG. 10

Clase

Atributos | Servicios | Derivaciones | Restricciones | Agentes | Transacciones | Relaciones | Generalidades

Atributos

Nombre	Tipo atributo	Tipo dato	Id	Transfo	Valor default	Perd. al crear	Nulos
PresentDate	Constante	Date			today()	SI	No
Status	Variable	Int			0	No	No
Cause	Variable	String	255			SI	No
AuthoDate	Variable	Date			NULL	No	SI
AuthoComments	Variable	String	255		NULL	No	SI
PaymentDate	Variable	Date			NULL	No	SI
PayComments	Variable	String	255			No	SI
TotExpenses	Derivado	Real					
TotExpensesCur	Derivado	Real			0	SI	No
Advances	Variable	Real					
AdvancesCur	Derivado	Real				No	SI
Exchange	Variable	Real					
Balance	Variable	Real					
BalanceCur	Derivado	Real					

Nombre: Tipo Atributo: Tipo Dato:

☐ Información Temporal

Ases:

Observaciones:

Clase: **Expense**

Aceptar Cancelar

(A)

Clase

Atributos | Servicios | Derivaciones | Restricciones | Agentes | Transacciones | Relaciones | Generalidades

Atributo

Balance

Fórmulas de Derivación

Condición	Fórmula
	TotExpenses - Advances

Condición:

Fórmula:

Observaciones:

Clase: **Expense**

Aceptar Cancelar

(B)

FIG. 11

The screenshot shows the 'Expense' form in the 'Financials' application. The form is divided into several sections: 'General Information', 'Payment Information', 'Expense Information', and 'Approval Information'. The 'Expense' section is currently active, showing a list of expenses with columns for Name, Category, and Amount. The 'Expense' list includes: 'New', 'Destroy', 'Close', 'Authorize', 'Approve', 'Pay', 'Project', 'Payment', 'In Payment Type', 'Out Payment Type', 'DELETE ALL', and 'TPAY'. The 'Expense' section also has a 'Notes' field.

SERVICES OF CLASS "EXPENSE"
FIG. 12

Next figure shows the formula for the "DELETEALL" transaction:

The screenshot shows a dialog box titled "Use" with a tabbed interface. The "Formula" tab is selected, displaying the formula: `FOR ALL Lines DO Lines.deleteLine(Lines). deleteExpense(THIS)`. Below the formula, there are fields for "Account" (set to "Expense"), "Agency" (empty), "Service" (set to "approve"), "Particular" (set to "R_thisExpense"), and "Holding" (empty). A checkbox "Grant Permission to the Transaction" is present. At the bottom, there is an "Observations" field and a "Class" dropdown set to "Expense". Buttons for "Aceptar" and "Cancelar" are at the bottom right.

DIALOG TO DEFINE FORMULA FOR "DELETEALL"
TRANSACTION
FIG. 13

The screenshot shows the 'Clase' (Class) configuration window in SAP. The 'Restricciones' (Restrictions) tab is selected, showing a table with columns 'Clase' and 'Mensaje De Error'. The 'Clase' field at the bottom is set to 'Expense'.

Clase	Mensaje De Error
Expense	Exchange must be greater than zero

INTEGRITY CONSTRAINTS OF EXPENSE CLASS

FIG. 14

The value of the attribute "Cause" will be loaded with the value of the argument "p_Cause" of the event "modify" when "modify" was executed.

The screenshot shows a dialog box titled "Modelo Funcional". At the top, there are two dropdown menus: "Clase" set to "Expense" and "Atributo" set to "Cause". To the right of these are "Aceptar" and "Cancelar" buttons. Below the dropdowns is a table with three columns: "Evento", "Efecto", and "Condición". The first row contains "modify", "p_Cause", and is empty. Below the table are three buttons: "Agregar", "Modificar", and "Borrar". Underneath these is a section labeled "Categoría" with three radio buttons: "Cardinal", "De Estado" (which is selected), and "De Situación". Below this is a section labeled "Detalles de Evaluación". It contains a dropdown menu for "Evento" set to "modify", a checkbox labeled "Intentar para el resto de atributos" which is unchecked, and a text field for "Condición de evaluación" containing "IF:". Below this is another text field for "Efecto del evento" containing "p_Cause".

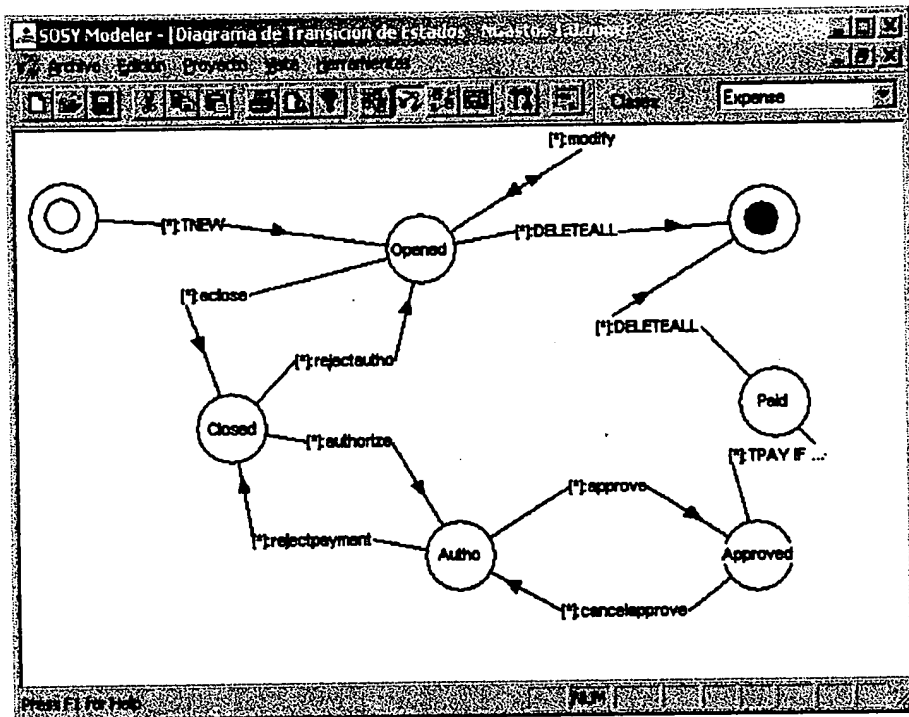
Evento	Efecto	Condición
modify	p_Cause	

☐ Cardinal
☒ De Estado
☐ De Situación

Detalles de Evaluación
 Evento: modify
☐ Intentar para el resto de atributos
 Condición de evaluación: IF:
 Efecto del evento: p_Cause

DIALOG BOX TO CREATE EVALUATION OF
 "CAUSE" ATTRIBUTE WITH: THE
 "MODIFY" EVENT TO FORM PART OF
 FUNCTIONAL MODEL
 FIG. 15

Class: **AccountUser**



STATE TRANSITION DIAGRAM FOR CLASS "EXPENSE"

FIG. 17

According to last paragraph of Procedure, if the Advances are greater than total expenses, the system must force the confirmation of the account user. It is expressed as a precondition in the "TPAY" transaction. Next figure shows it.

The image shows a screenshot of a software window titled "Transición". It contains several fields and buttons:

- Origen:** A dropdown menu with "Expenses" selected.
- Destino:** A dropdown menu with "Paid" selected.
- Buttons:** "Aceptar" and "Cancelar" are located in the top right corner.
- Detalles:** A section containing:
 - Advertencia:** A label with a warning icon.
 - Precondición:** A text area containing the logical expression "Balance > 0 OR ps_ReturnAdvance = TRUE".
 - Condición de control:** An empty text area.
 - Mensaje en caso de Error:** A text area containing the message "Check the advanced money excess".
- Service:** A dropdown menu with "TPAY" selected.

DIALOG BOX TO MODEL PRECONDITION

FIG. 18

Conjunto de Visualización

Nombre:

Atributos a visualizar:

Atributo	Tipo dato
Project.ProjectName	String
Employee.EmpName	String
Employee.EmpSur...	String
Status	Int
AuthoDate	Date
PaymentDate	Date
TotExpenses	Real
Balance	Real

Atributos:

Atributo	Tipo dato
Cause	String
AuthoDate	Date
AuthoComments	String
PaymentDate	Date
PayComments	String
TotExpenses	Real
TotExpensesCur	Real
Advances	Real
AdvancesCur	Real
Exchange	Real
Balance	Real
BalanceCur	Real

Clase: Expense

DIALOG BOX USED BY SOSY MODELER
TO ESTABLISH A SET OF ATTRIBUTES
TO BE DISPLAYED FOR THE "EXPENSE" CLASS

FIG. 19

Filtro

Filtro: Alias: Limpia Borrar

Fórmula: << Variable

Observ:

Variables

Nombre	Alias	Tipo dato	Tipo estado	Estado
vf_Project	Project	Project	Sel. Población	
vf_Employee	Employee	Employee	Sel. Población	
vf_DateIniIssue	Initial Issuing Date	Date		
vf_DateEndIssue	Final Issuing Date	Date		
vf_DateIniApp	Initial Approving D...	Date		

Nueva Modificar Borrar

Tipo: ☐ Simple ☐ Objeto-valorado

Nombre: Estado de sim:

Alias: Estado de selección:

Tipo de dato:

Clase: Aceptar Cancelar

DIALOG BOX USED BY SOSY MODELER
TO ESTABLISH THE SEARCHING CRITERIA
FOR THE EXPENSE CLASS AND TO ESTABLISH
THE FILTER FORMULA ^{TO USE} AND THE VARIABLES
TO REQUEST THE USER TO ENTER

FIG. 20

FLOWCHART OF THE FUNCTIONS THAT ALL SPECIES IN THE DOCUMENTATION
GENERATOR TRANSLATOR SUBGENUS WILL PERFORM

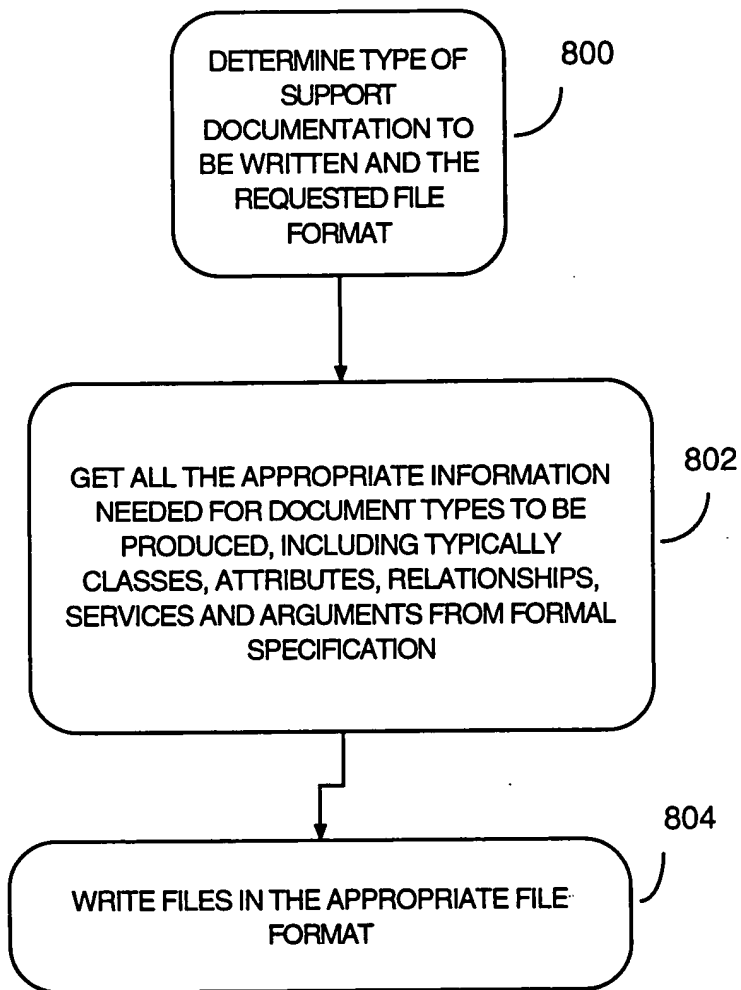


FIG. 21

[illegible]